

POLIANTHES HOWARDII (AGAVACEAE):

A NEW SPECIES FROM COLIMA

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Within the Mexican genus Polianthes L. the group of species which has been treated as section Bravoa (Lex.) Pax & K. Hoffm. includes those species with tubular, usually pendent, red or orange flowers with filaments inserted in the basal half of the tube. In most of these species the flowers are without green or brown coloring, are paired at the nodes, and the mouth of the flower is essentially symmetrical. A species different from the majority in all three of these characters has been collected in Colima and is described for the first time here.

Polianthes howardii Verhoek, sp. nov. (Fig. 1a,b).

Inflorescentia laxa, 73.0-111.0 cm alta; flores ad nodos singulatim portati, longe pedicellati, patenti-pendentes, corallini sed gradatim in tertia parte suprema viridescentes, interius saepe marrino-vittati, tubo fere recto, postice (superne) quam antice longiore, ore asymmetrico, staminibus ad basem tubi affixis.

Rhizome fleshy, erect, 3.0 cm long, 0.9 cm in diameter, surmounted by a rosette of leaves, base of rosette surrounded by remnant leaf bases 3.5-4.0 cm long; roots fleshy near rhizome, becoming wiry distally. Leaves 5-6, erect-spreading, broadly channelled, narrowly oblanceolate to linear with acute or mucronate apex, 22.0-27.0(-36.0) cm long, (1.1-)1.5-2.5 cm broad, grass-green, glabrous, glossy, sometimes flecked with magenta toward base underneath; margin entire. Inflorescence 73.0-111.0 cm tall, glabrous, sometimes flecked with magenta at base; flowering part elongate, open, 21.5-70.5 cm long, with 13-30 floral nodes, lower internodes ca. 3.0-5.0(-10.0) cm long; bracts of scape ca. 7, gradually smaller than the leaves; floral bracts lanceolate, acuminate, abruptly smaller than the sterile bracts, 1.5 cm long or less; bracteoles single, small. Flowers solitary at the nodes, long-pedicellate, tubular, glaucous, exterior coral-red at base, grading to green in upper third, irregularly streaked with yellow, interior greenish-yellow, often with maroon stripes that extend approximately halfway into the tube; pedicels erect, 1.7-2.9(-5.3) cm long, slender in flower, becoming thicker in fruit; mature flowers semipendent, hanging at an approximately 30° angle from horizontal; ovary 0.3-0.4 cm long, 0.25-0.3 cm in diameter; tube constricted just above the ovary, inserted at a slight angle to the ovary, nearly straight, top of tube over-reaching bottom by 0.1-0.2 cm so that the mouth is asymmetrical,

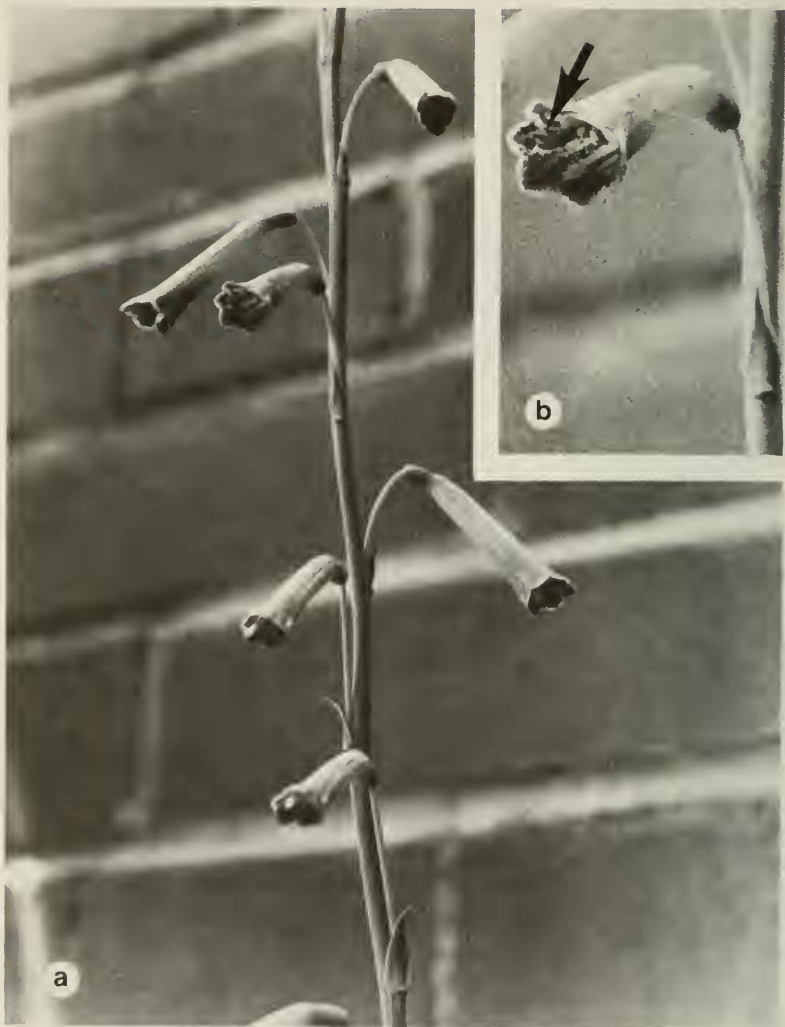


Figure 1. Polianthes howardii, a. middle section of inflorescence (X 0.75); b. flower with anthers (arrow) positioned at top of floral tube (X 1.5).

top of tube 1.8-2.1 cm long, 0.3-0.5 cm in diameter; segments short, slightly flared, rounded, 0.15-0.3 cm long, 0.2 cm wide, apical hair tuft slight; stamens included, filaments as long as the tube, attached near base of tube, the upper slightly longer than the lower; anthers yellow, attached medially, ca. 0.5 cm long, not freely moving; style white, at maturity longer than the stamens, exerted by ca. 0.2 cm; stigma white, papillate, 3-lobed, the lobes reflexed at maturity. Fruit a globose capsule, 0.8-1.0 cm in diameter.

Type: MEXICO. COLIMA: 3 1/2 mi S of Tequizatlan at K 211 on Mex. 110 at a microondas (television tower). In partial shade in dark, loamy soil, well drained. Estimated elevation ca. 3000 ft, 10 Aug 1972, T. M. Howard with James Bauml & Steve Lowe 72-70 (Holotype, RSA 240114; isotypes BM, G, MO, US, T. M. Howard herbarium). Other specimens examined were prepared from plants in cultivation: USA. PENNSYLVANIA: Annville, Lebanon Valley College greenhouse, 11 Aug 1975, S. Verhoek 882T (source: type locality, Howard et al 72-70 [Verhoek herbarium]). TEXAS: San Antonio, garden, TMH [T. M. Howard] s. n. (source: type locality, Howard et al 72-70 [RSA 240103]).

This species is distinctive in the genus Polianthes because only it and P. densiflora (B. L. Robinson & Fern.) Shinnery have flowers solitary at the nodes and only in P. densiflora and P. nelsonii Rose is the mouth of the tube as asymmetrical. However, despite its similarities to these two species, P. howardii has closer affinity with the species in the section Bravoa because of its coral-red flowers and the insertion of its stamens at the base of the tube. The flowers of P. howardii are the most colorful of the bravoa group because the basal red grades to green at the mouth and the interior of the tepals and tube is often marked with maroon stripes.

The tubular red flowers of section Bravoa are typical examples of bird-pollinated flowers. The flower of P. howardii seems to be a variant of the classic pollination type. As in many other species in this section, the course of floral maturity in P. howardii is precisely timed and choreographed. The flowers are protandrous by two days. When the flower opens, the style is not fully elongated. At the same time, the stamens are at full length and held along the top of the tube so that the anthers are positioned at the top of the mouth of the flower (Fig. 1b). The anthers dehisce on the first day of bloom.

On the second day of bloom, the stamens begin to droop toward the bottom of the tube and the style continues to elongate along the top. On the third day, the stamens, with withered anthers, lie along the bottom of the tube and the style is extended a short way past the top of the tube, so that the reflexed lobes

of the receptive stigma are at, or slightly beyond, the position previously held by the newly opened anthers. One or two flowers open each day so that all stages of flowering are present on a single inflorescence. The progress of floral maturity seems to assure efficiency of pollination by the deposition and picking-up of pollen at the same spot on the body of the pollinator.

This multicolored species was discovered by Thad M. Howard, DVM, and his associates Steve Lowe and James Bauml, as they descended a small mountain in Colima. Additional field information supplied by Dr. Howard (personal correspondence) is as follows: "...from the hills of central Colima, growing near the top of a wooded hill in humusy black soil in part shade." In other correspondence he reports further that the type locality is approximately three-fourths of the way up the mountain, in oak woods on calcareous soil.

Thad Howard, during numerous expeditions to Mexico in search of attractive bulbous and tuberous plants, has collected many specimens for his own garden and has generously sent others for study at various institutions. It is a pleasure to name this striking Polianthes species in his honor.

Acknowledgment

I would like to thank Drs. William Dress and Harold E. Moore, Jr., L. H. Bailey Hortorium, Cornell University, for reading the manuscript and Dr. Dress for translating the Latin diagnosis.